CHAPTER 9

INFORMATION TECHNOLOGY (IT) REQUESTS

9.1 INTRODUCTION

This chapter provides instructions for making information technology operating and capital requests. Please note that examples and forms for the IT budget submissions are provided on the OSPB website at:

www.state.co.us/gov_dir/govnr_dir/ospb/budgetinstructions.html in Appendix N;

and, on the OIT/IMC website at:

www.colorado.gov/oit or www.oit.state.co.us/commissions/imc_documents.asp

Guidance for submitting IT planning documentation is available on the OIT/IMC website. In accordance with Section 24-37.5-106(1)(d) and (f), C.R.S., the Office of State Planning and Budgeting together with the Office of Innovation and Technology, have formed the following policies and procedures for state agencies to follow in developing technology-related budget requests. Note that IT budget instructions have changed since last year; please read all related chapters carefully.

These documents must be submitted in electronic form – either on disk or via e-mail to the department's OIT and OSPB analyst.

The following topics are addressed in this chapter:

- Capital versus Operating Information Technology Requests (Section 9.2);
- Requirements for Operating Information Technology Change Requests (Section 9.3);
- Overview of the Efficiency and Effectiveness Analysis (Section 9.4);
- Common Identifying Information (Section 9.5);
- Problem or Opportunity Definition (Section 9.6);
- Available Alternatives (Section 9.7);
- Assessment of Alternatives (Section 9.8);
- Requirements for Capital Information Technology Requests (Section 9.9); and
- IT Project Plan (ITPP) (Section 9.10).

9.2 CAPITAL VERSUS OPERATING IT REQUESTS

Funding for IT-related projects (those that include, in their entirety or in part, IT products and/or services) can be requested through the operating or capital budget processes. Some projects may require both operating and capital funding. The following guidelines can be used to determine which type of funding to request.

- All IT projects totaling less than $500,000 should be made through the operating budget process. For projects under $500,000, the operating request should include both one-time and on-going costs.
- IT projects totaling $500,000 or more should be made through the capital budget process. The capital request should be for one-time costs only. Ongoing operating and maintenance costs associated with IT projects over $500,000 should be requested through the operating budget process (see Chapter 10 for further clarification of capital information technology requests).

Under certain circumstances, a department can apply for a waiver of the $500,000 limit. The waiver process is addressed in Chapter 10. Contact OSPB if you have any questions about the waiver process.

9.3 FY 2006-07 PLANNING AND BUDGETING CYCLE

Information technology projects should continue to focus on opportunities for consolidation with existing systems, resource sharing, cross-agency collaboration and first priority given to any business solutions offered by the Statewide Internet Portal Authority.

9.4 REQUIREMENTS FOR OPERATING IT CHANGE REQUESTS

This section gives an overview of the documents required for operating IT requests. All information technology change requests require a Schedule 6 (see Chapter 6); efficiency and effectiveness analysis; if the request is for more than 500 project hours or more than $25,000 in total funding, an IT Project Plan; and, if the request involves 500 or more project hours or an expenditure of more than $25,000, and Architecture Review Scorecard (ARS). The IT Project Plan and Architecture Review Scorecard forms can both be downloaded from the OIT Web Site. Information technology requests should also be indicated in the checkbox on the Schedule 7, Schedule 8, and Schedule 9 (see Chapter 6). Exhibit 9-1 provides an overview of required schedules and documents.

Exhibit 9-1
Documenting IT Requests for Operating Funds

Document	Description	Instruction Location	When to submit
Architecture Review Scorecard (ARS)	Measures the compliance of the proposed technology architecture with the State's Information Technology Standards.	IMC/OIT website	IT requests that include more than 500 hours of IT work or more than $25,000 of IT products or services.
Efficiency and Effectiveness Analysis (E&E)	Demonstrates the value of a request by comparing the costs to the benefits.	Chapter 9 and the OSPB website in Appendix N	All capital and operating IT budget requests
IT Project Plan (ITPP)	Provides a technology-focused overview of the associated IT components and related IT efforts.	IMC/OIT website	IT requests that include more than 500 hours of IT work or more than $25,000 of IT products or services.
Schedule 6	Provides data on the requested incremental change in spending authority and FTE identified by line item.	Chapter 6	All IT budget change requests

Architecture Review Scorecard (ARS). All operating and capital requests, which involve 500 or more project hours or an expenditure of more than $25,000, require an ARS. The OIT/IMC website provides instructions and examples for the ARS.

Efficiency and Effectiveness Analysis. The format for an efficiency and effectiveness analysis on IT requests differs from other requests only in the type of analysis required. Section 9.8 describes the prescribed cost benefit analysis for all IT requests. All IT cost assumptions should adhere to IMC/OIT policies and directives.

Information Technology Project Plan (ITPP). All operating and capital requests, which involve 500 or more project hours or an expenditure of more than $25,000, require an ITPP. The OIT/IMC website provides instructions and examples for the ITPP.

The ITPP must demonstrate an informed decision on the initiative through collaboration and planning with the Office of Innovation and Technology and tie to the Department's IT Plan. The ITPP is a necessary enclosure in the August 1 budget submission.

Schedule 6. The Schedule 6 format for IT change requests will not differ from other types of requests. Please note that there is a checkbox at the bottom of the Schedule 6 to indicate whether or not the request is for an IT project.

- *Screening of IT Requests.* Declaring a change request an "IT request" has traditionally been a mechanism for triggering additional review of the request by both the OIT and the IMC. Beginning with the FY 2006-07 budget cycle, Departments are encouraged to

coordinate with the OSPB and OIT prior to submitting such requests on August 1. This will prevent unnecessary agency workload in the form of the additional analytical and documentation requirements that come with a requested being labeled as "IT". While the early coordination with OSPB and OIT is still required, examples involving information technology that may be exempted from the requirements of Chapter 9 include, but are not limited to the following examples:A routine contract renewal or contract-generated cost increase except where such a renewal would result in a major adjustment to the business requirements of the affect systems or significant impacts to system users or clientele;

- A transfer of or refinancing of funding in support of a information technology system;
- A successive phase of a multi-year project except where the OSPB requires annual funding requests for a large-scale or critical system development (e.g., operating funding tied to a capital project); or,
- A technical budget request.

9.5 OVERVIEW OF THE EFFICIENCY AND EFFECTIVENESS ANALYSIS

Each efficiency and effectiveness analysis must include five required elements (Exhibit 9-2), and each of these elements must be clearly identified with a separate heading. The required elements allow the department to:

- Summarize the justification for why a proposed approach is preferred to available alternatives, including the option of making no budgetary change;
- describe a specific problem or opportunity that needs to be addressed;
- propose alternative courses of action consistent with the department's objectives and statutory authority; and
- assess the tradeoffs between the costs and benefits associated with the proposed alternatives.

Although these elements are listed in specific order, the actual process of developing the analysis is interactive and will involve working on several of the elements together. Exhibit 9-2 provides a checklist for an efficiency and effectiveness analysis.

Exhibit 9-2
Required Elements Checklist for an Efficiency and Effectiveness Analysis

- ❑ **1. Identifying Information/Summary of Request**
- ❑ department name
- ❑ request/analysis title
- ❑ request priority number
- ❑ summary
- ❑ description of how performance will be evaluated - this should tie to benefits

- ❑ **2. Problem or Opportunity Definition**

- ❑ **3. Available Alternatives**
- ❑ description, authority, and link to objectives

- ❑ **4. Analytical Technique**
- ❑ statement identifying the prescribed cost benefit analysis for IT change requests

- ❑ **5. Assessment of Alternatives**
- ❑ background information
- ❑ linking budget expenditures to the full range of outcomes (identify general types of costs benefits and describe in qualitative terms)
- ❑ application of cost benefit analysis/assumptions and calculations
  - ⇒ comparison of benefits to costs
  - ⇒ costs
  - ⇒ benefits
  - ⇒ cost assumptions and calculations
  - ⇒ benefit assumptions and calculations
- ❑ other key issues for decision making
- ❑ omissions, biases, or uncertainties
- ❑ Expressed initiative development and planning in collaboration with the Office of Innovation and Technology.

9.6 COMMON IDENTIFYING INFORMATION/SUMMARY OF REQUEST

The first required element in an efficiency and effectiveness analysis consists of common identifying information and a summary of the request. This element should include five components: department name, request/analysis title, priority number, a summary of the requested alternative, and a description of how performance will be evaluated. The summary of the request should identify the preferred alternative and highlight key points to justify the request. It should be limited to one or two paragraphs. The full background, assessment, and justification for the request should be presented in remaining elements of the analysis. Avoid excessive repetition.

9.7 PROBLEM OR OPPORTUNITY DEFINITION

The second required element in an efficiency and effectiveness analysis is the definition of a problem or opportunity that needs to be addressed. The problem or opportunity should be

defined in a way that conveys the significance, scope, magnitude, and timing (onset, frequency, or duration) of the issue. It is important that the definition does not presuppose a solution. For example, rather than defining a help desk problem as a lack of help desk personnel, it may be defined as poor helpdesk response time.

One additional component of the problem or opportunity definition that should be included for budget amendments is an explanation of why the request was not submitted with the November 1 request and why it cannot wait until the next normal budget cycle.

9.8 AVAILABLE ALTERNATIVES

The next required element in an efficiency and effectiveness analysis is a description of alternative approaches for addressing the problem or opportunity. Identified alternatives should be feasible options that merit further evaluation. In many instances, these options should include a non-IT solution. A department is not required to include a specific number of alternatives in its analysis and should not include "straw" alternatives that would not merit thoughtful consideration by the Governor or the Legislature. However, all analyses should include at a minimum a recommended option and the option of not funding the request. For example, if the request is for an automated claims processing system, this alternative should be compared to the current method of doing business.

For each of the identified alternatives, the analysis should:

- Briefly describe the alternative and indicate whether the alternative is "recommended" or "not recommended;"
- demonstrate the department's authority to implement the alternative, including a specific statutory citation or executive order along with identification of any need for changes in authority; and
- identify specific department objectives and, if applicable, Governor's priorities that are promoted by the alternative (cross-referenced to the Schedule 1).

9.9 ASSESSMENT OF ALTERNATIVES

This element of the analysis includes an assessment of the tradeoffs associated with available alternatives and is the key section for justifying the request. This element includes five components: background information; linkage of budgetary expenditures to the range of outcomes; application of the cost benefit analysis/assumptions and calculations; key issues of decision making; and omissions, biases, and uncertainties.

The required components for evaluating each alternative are described below. Some or all of these components may be the same for each alternative. If this is the case, the component(s) only need to be listed once. Avoid repetition of information.

Alternatives should compare at a minimum two reasonable alternatives, one of which is not funding the request. It is not acceptable to compare two alternatives where both alternatives recommend funding the request.

Background Information

In the first part of the assessment, provide background information related to the request. The purpose of this section is to provide context for understanding the analysis that will follow. In this section, it is not necessary to include facts or statistics that are part of the analytical justification for the request.

Linkage of Budgetary Expenditures to the Full Range of Outcomes

This component consists of a qualitative description explaining how budgetary expenditures link to the full range of outcomes. This should be a narrative section that focuses on illustrating in general terms the types of costs and benefits associated with the request. The analytical comparison of costs to benefits and the assumptions and calculations supporting the analysis should be presented in the next section.

Application of the Cost Benefit Analysis / Assumptions and Calculations

All IT requests are required to use the same analytical technique, a prescribed cost benefit analysis. Required worksheets, templates and an example analysis are provided on the OSPB website in Appendix N and on the OIT/IMC website. Costs and benefits should be quantified to the greatest extent possible for the lifecycle of the project including planning, development, and ongoing operations and maintenance. The cost benefit analysis needs to be provided in an electronic format in addition to being provided in hard copy form within the request. Included in this analysis are five types of worksheets:

- An *Application of Cost Benefit Analysis* worksheet that compares the net benefit of each alternative;
- a *Cost* worksheet for each alternative that delineates the request year costs along with any previous costs and all future costs until replacement;
- a *Benefit* worksheet for each alternative that delineates the request year benefits along with any previous benefits and all future benefits until replacement;
- a *Cost Explanation* worksheet that describes and calculates the costs for each alternative;
- a *Benefit Explanation* worksheet that describes and calculates the benefits for each alternative.

The *Application of Cost Benefit Analysis* worksheet provides a summary of the costs and benefits for each alternative and allows for comparison across alternatives. This worksheet should be adjusted to best portray the alternatives and the comparison between alternatives. It should be linked to the other worksheets in order to reduce error and facilitate analysis. (The necessary formulas are provided in the template.) This worksheet has two main parts: the Summary of the Analysis for Each Alternative, and the Comparison of Alternatives. The expected replacement year for each alternative will be included on this worksheet.

The *Cost* worksheet provides the lifecycle costs for the alternative by year. Only those categories provided in the worksheet that are appropriate for the alternative should be included. The IT category definitions are provided on the OSPB website in Appendix N. The provided categories are not inclusive and may require additional categories to be added where appropriate. The number of columns is flexible as well. There should be the same number of columns as the number of years in the lifecycle of the project. The request year as well as development year(s) and operation and maintenance year(s) should be indicated on the worksheet. The expectation for the amount of detail to provide is commensurate with the size of the request. For example, a request for a new system will require information for most if not all of the cost categories and numerous years. While, a request for a new server may require only a few cost categories and a few years until replacement. If there are any ongoing costs, they need to be included. For multi-year projects, any changes in the previous years' costs should be delineated along with the current and future year costs.

The *Benefit* worksheet provides the incremental benefits of the alternative by year. The benefit should be named in the first column and the estimated value of the benefit should be put into the appropriate year that the benefit will occur. The number of columns in the *Benefit* worksheet should equal the number of columns in the *Cost* worksheet. Although departments should make every effort to quantify benefits, there may be some benefits that defy quantifying. One example is federal mandates. In this case, a description of each benefit should be included on the *Benefits* worksheet. An argument that the value of non-quantified benefits is at least equal to the gap in costs would need to be made. In order for a project to be approved, the quantified plus non-quantified benefits of the alternative should be greater than the alternative costs.

The *Explanation of Costs* worksheet will have the same costs as identified in the *Cost* worksheet with the amount in the request year and an explanation. Document rate calculations and other mathematical formulas as well as the basis for using a particular estimate, the source of data, and all other assumptions. This worksheet provides the justification for the costs of the alternative.

The *Explanation of Benefits* worksheet will have the same benefits as identified in the Benefit worksheet with an explanation. Document rate calculations and other mathematical formulas as well as the basis for using a particular estimate, the source of data, and all other assumptions. The explanation should indicate if the benefit is a cost avoidance, a savings by some entity other than the state, an actual savings by the state, or a non-quantifiable benefit. If it is an actual savings by the state, indicate the line from which the savings can be taken. This worksheet provides the justification for the benefits of the alternative.

Provide a *Cost*, *Benefit*, *Explanation of Costs* and *Explanation of Benefits* worksheet for each alternative considered and summarize your analytical results in the *Application of Cost Benefit Analysis* worksheet.

Key Issues for Decision Making

A wide range of information besides an assessment of costs and benefits is often needed to frame the context for a decision and it is important to include this information as part of the analysis. This component of the analysis should provide the additional information that is needed to evaluate a request.

Omissions, Biases, or Uncertainties

This component should consist of an assessment of the potential direction or magnitude of the omissions, biases, or uncertainties associated with the analysis. Any issues that could change the conclusion of the analysis should be clearly explained.

Expressed Initiative Development and Planning through OIT Collaboration

This component is a required feature of all IT budget requests. This section must clearly demonstrate that initiative development was accomplished through collaboration with the Office of Innovation and Technology. In narrative format, the agency should express how the initiative was conceived and then explain how, through OIT collaboration, the request was further analyzed and, if necessary, revised. If the agency was granted any exception to any requirements, such as formal review as an IT request or deliverables (OIT forms, etc.) this information should also be provided in this section.

9.10 REQUIREMENTS FOR CAPITAL IT REQUESTS

Exhibit 9-3 provides an overview of required forms and documents.

Exhibit 9-3
Documenting IT Requests for Capital Funds

Document	Description	Instruction Location	When to submit
Architecture Review Scorecard (ARS)	Measures the compliance of the proposed technology architecture with the State's Information Technology Standards.	IMC/OIT website	IT requests that include more than 500 hours of IT work or more than $25,000 of IT products or services.
CC-IT	Breakdown of all capital construction funding into designated cost categories.	Chapter 10	All capital IT requests
Efficiency and Effectiveness Analysis (E&E)	Demonstrates the value of a request by comparing costs to the benefits.	Chapter 9	All capital and operating IT budget requests
IT Project Plan (ITPP)	Provides a technology-focused overview of the associated IT components and related IT efforts.	Chapter 9 and the IMC/OIT website	IT requests that include more than 500 hours of IT work or more than $25,000 of IT products or services.
Project Status Report (PSR)	Progress report including status updates on the budget, deliverables, and schedule.	IMC/OIT guidelines	All requests to continue IT projects which are already underway.
CC-O	Program objectives and facilities/equipment needs	Chapter 10	With all capital construction requests
CC-P	Five-year capital plan	Chapter 10	With all capital construction requests

Architecture Review Scorecard (ARS). All operating and capital requests, which involve 500 or more project hours or an expenditure of more than $25,000, require an ARS. The OIT/IMC website provides instructions and examples for the ARS.*CC-IT*. This form is a version of the primary capital construction request form (CC-C) specifically modified for documenting capital IT requests. It includes two (2) components: the 1-page "Project Costs Cover Sheet" and the multiple page "Project Support Information."

Efficiency and Effectiveness Analysis. The format for an efficiency and effectiveness analysis on IT requests differs from other requests only in the type of analysis required. Section 9.8 describes the prescribed cost benefit analysis for all IT requests. All IT cost assumptions should adhere to OIT standards and guidelines.

Information Technology Project Plan (ITPP). All operating and capital requests, which involve 500 or more programming hours or an appropriation of more than $25,000 total funding, require an ITPP. Instructions and examples for the ITPP are provided on the OIT/IMC website.

Project Status Report. This report must follow the OIT published Project Status Report process (see OIT Project Status Report form and associated instruction set).

9.11 IT PROJECT PLAN (ITPP) INSTRUCTIONS AND FORM

IT change requests that include more than 500 hours of IT work or more than $25,000 total funding require an IT Project Plan (ITPP). The IT Project Plan instructions and form are provided on the OIT/IMC website.

Note the revised requirements from above. The ITPP must demonstrate that development of the overall request was done through collaboration with the Office of Innovation and Technology. Additionally, an explanation evidencing how the ITPP fits into the Department IT Plan (DITP) must be provided.